

DERWENT-ACC-NO: 2003-567150

DERWENT-WEEK: 200353

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TITLE: Event-triggering command perception system for
SDRAM bus
peripheral control, perceives command upon
detection of
predetermined sequence of relevant SDRAM
addresses

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PATENT-ASSIGNEE: COSKY J E[COSKI] , RUEHLE M D[RUEHI], INTEL
CORP[ITLC]

PRIORITY-DATA: 2001US-0966824 (September 27, 2001)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE |
|-------------------|----------------|----------|
| PAGES MAIN-IPC | | |
| WO 2003027862 A2 | April 3, 2003 | E 000 |
| G06F 013/00 | | |
| US 20030061454 A1 | March 27, 2003 | N/A 013 |
| G06F 013/00 | | |

DESIGNATED-STATES: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO
CR CU CZ
DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
KZ LC
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE
SG SI
SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW AT BE BG CH CY CZ DE DK
EA EE
ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR
TZ UG
ZM ZW

APPLICATION-DATA:

| PUB-NO | APPL-DESCRIPTOR | APPL-NO |
|--------------------|-----------------|----------------|
| APPL-DATE | | |
| WO2003027862A2 | N/A | 2002WO-US27858 |
| August 29, 2002 | | |
| US20030061454A1 | N/A | 2001US-0966824 |
| September 27, 2001 | | |

INT-CL (IPC): G06F013/00

ABSTRACTED-PUB-NO: US20030061454A

BASIC-ABSTRACT:

NOVELTY - A field programmable gate array (FPGA) (202) perceives command upon detection of a predetermined sequence of relevant SDRAM addresses within a string of SDRAM addresses. The string includes 'N' or less non-relevant addresses between any two sequential relevant memory addresses.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a method to perceive event triggering command.

USE - To perceive event-triggering command for control of SDRAM bus peripheral in computer.

ADVANTAGE - Utilizes separated device address call sequencing for control of memory bus peripheral devices, thereby allowing for spurious data between values in the address sequence.

DESCRIPTION OF DRAWING(S) - The figure illustrates the operation of an active memory bus peripheral.

FPGA 202

CHOSEN-DRAWING: Dwg.2/6

TITLE-TERMS: EVENT TRIGGER COMMAND PERCEPTION SYSTEM BUS PERIPHERAL
CONTROL
COMMAND DETECT PREDETERMINED SEQUENCE RELEVANT ADDRESS

DERWENT-CLASS: T01 U13 U14

EPI-CODES: T01-H01A; U13-C04C; U14-A03B4A; U14-A07C;

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: N2003-450896

| L Number | Hits | Search Text | DB | Time stamp |
|----------|-------|--|----------|------------|
| 1 | 1 | ("5237616").PN. | USPAT; | 2004/01/07 |
| 2 | 1 | ("5051947").PN. | US-PGPUB | 17:28 |
| 302 | 7 | ((US-6510532-\$ or US-6078545-\$ or US-6041389-\$ or US-6035353-\$ or US-6000013-\$ or US-5920885-\$ or US-5905907-\$ or US-5892826-\$ or US-5818939-\$ or US-5761694-\$ or US-5721946-\$ or US-5712991-\$ or US-5416916-\$ or US-5408678-\$ or US-5377264-\$ or US-5249232-\$ or US-5930453-\$ or US-5715476-\$ or US-6334164-\$ or US-5214775-\$ or US-6434699-\$ or US-6115816-\$ or US-6061449-\$).did. or (US-20030061406-\$ or US-20030061454-\$ or US-20030227800-\$ or US-20030198072-\$ or US-20030058729-\$ or US-20020199046-\$ or US-20020065972-\$).did.) not ((US-6510532-\$ or US-6078545-\$ or US-6041389-\$ or US-6035353-\$ or US-5920885-\$ or US-5905907-\$ or US-5818939-\$ or US-5761694-\$ or US-5721946-\$ or US-5712991-\$ or US-5416916-\$ or US-5249232-\$ or US-5930453-\$ or US-5715476-\$ or US-6334164-\$ or US-5214775-\$).did. or (US-20030061406-\$ or US-20030061454-\$ or US-20030227800-\$ or US-20030198072-\$ or US-20030058729-\$ or US-20020199046-\$ or US-20020065972-\$).did.) | USPAT; | 2004/01/07 |
| 359 | 352 | sequence with control\$4 with address.ab. | US-PGPUB | 17:53 |
| 360 | 6 | sequence with control\$4 with address same (recogniz\$4 perceiv\$4).ab. | USPAT; | 2004/01/07 |
| 361 | 5728 | data with sequence same (decrypt\$6 recogniz\$4 perceiv\$4) | US-PGPUB | 17:59 |
| 362 | 2110 | data with sequence with(decrypt\$6 recogniz\$4 perceiv\$4) | USPAT; | 2004/01/07 |
| 363 | 119 | (data with sequence with(decrypt\$6 recogniz\$4 perceiv\$4)) with command | US-PGPUB | 18:40 |
| 364 | 11534 | data with sequence with(decrypt\$6 recogniz\$4 perceiv\$4 detect\$4) | USPAT; | 2004/01/07 |
| 365 | 3415 | data near (sequence string) with(decrypt\$6 recogniz\$4 perceiv\$4 detect\$4) | US-PGPUB | 18:01 |
| 367 | 29 | data near (sequence string) with(decrypt\$6 recogniz\$4 perceiv\$4 detect\$4)near2 command | USPAT; | 2004/01/07 |
| 366 | 11 | data near (sequence string) with(decrypt\$6 recogniz\$4 perceiv\$4 detect\$4)near command | US-PGPUB | 18:00 |
| 368 | 550 | data near (sequence string)same (decrypt\$6 recogniz\$4 perceiv\$4 detect\$4) near4 (relavent command code) | USPAT; | 2004/01/07 |
| 369 | 26 | (data near (sequence string)same (decrypt\$6 recogniz\$4 perceiv\$4 detect\$4) near4 (relavent command code)) same address with sequence | US-PGPUB | 18:05 |
| 370 | 0 | patern with recongiz\$4 | USPAT; | 2004/01/07 |
| 371 | 5 | pattern with recongiz\$4 | US-PGPUB | 18:27 |
| 372 | 77 | 713/190.icls. | USPAT; | 2004/01/07 |
| 373 | 33903 | (data adj sequence code command) with (decrypt\$6 recogniz\$4 perceiv\$4 authenticat\$5) | US-PGPUB | 18:28 |
| | | | USPAT; | 2004/01/07 |
| | | | US-PGPUB | 18:28 |
| | | | USPAT; | 2004/01/07 |
| | | | US-PGPUB | 18:56 |

| | | | | |
|-----|------|--|--------------------|---------------------|
| 374 | 1616 | (data adj sequence code command) with (decrypt\$6 recogniz\$4 perceiv\$4 authenticat\$5).ab. | USPAT; US-PGPUB | 2004/01/07 18:46 |
| 375 | 69 | (data adj sequence code command) with (decrypt\$6 recogniz\$4 perceiv\$4 authenticat\$5).ti. | USPAT; US-PGPUB | 2004/01/07 18:41 |
| 376 | 0 | ((data adj sequence code command) with (decrypt\$6 recogniz\$4 perceiv\$4 authenticat\$5).ab.) and periperal with control\$4 | USPAT; US-PGPUB | 2004/01/07 18:49 |
| 377 | 85 | ((data adj sequence code command) with (decrypt\$6 recogniz\$4 perceiv\$4 authenticat\$5).ab.) and peripheral with control\$4 | USPAT; US-PGPUB | 2004/01/07 18:48 |
| 383 | 2 | sequence with (bounded predefined) with spurious adj data | USPAT; US-PGPUB | 2004/01/07 18:52 |
| 386 | 1 | ((data adj sequence code command) with (decrypt\$6 recogniz\$4 perceiv\$4 authenticat\$5).ab.) and spurious adj data | USPAT; US-PGPUB | 2004/01/07 18:56 |
| 388 | 10 | ((US-6510532-\$ or US-6078545-\$ or US-6041389-\$ or US-6035353-\$ or US-5920885-\$ or US-5905907-\$ or US-5818939-\$ or US-5761694-\$ or US-5721946-\$ or US-5712991-\$ or US-5416916-\$ or US-5249232-\$ or US-5930453-\$ or US-5715476-\$ or US-6334164-\$ or US-5214775-\$ or US-5553059-\$ or US-5467088-\$ or US-5231545-\$ or US-4060797-\$ or US-6665796-\$ or US-6351814-\$ or US-6324676-\$ or US-6338099-\$ or US-6226742-\$ or US-6434699-\$).did. or (US-6115816-\$ or US-6061449-\$ or US-6000013-\$ or US-5892826-\$ or US-5408678-\$ or US-5377264-\$).did. or (US-20030061406-\$ or US-20030061454-\$ or US-20030227800-\$ or US-20030198072-\$ or US-20030058729-\$ or US-20020199046-\$ or US-20020065972-\$ or US-20010047480-\$).did.) not ((US-6510532-\$ or US-6078545-\$ or US-6041389-\$ or US-6035353-\$ or US-6000013-\$ or US-5920885-\$ or US-5905907-\$ or US-5892826-\$ or US-5818939-\$ or US-5761694-\$ or US-5721946-\$ or US-5712991-\$ or US-5416916-\$ or US-5408678-\$ or US-5377264-\$ or US-5249232-\$ or US-5930453-\$ or US-5715476-\$ or US-6334164-\$ or US-5214775-\$ or US-6434699-\$ or US-6115816-\$ or US-6061449-\$).did. or (US-20030061406-\$ or US-20030061454-\$ or US-20030227800-\$ or US-20030198072-\$ or US-20030058729-\$ or US-20020199046-\$ or US-20020065972-\$).did.) | USPAT; US-PGPUB | 2004/01/07 18:55 |
| 391 | 31 | ((data adj sequence code command) with (decrypt\$6 recogniz\$4 perceiv\$4 authenticat\$5)) same relevant adj data | USPAT; US-PGPUB | 2004/01/07 18:57 |
| - | 1 | ("6038603").PN. | USPAT; US-PGPUB | 2004/01/06 17:30 |
| - | 352 | sequence with control\$4 with address.ab. | USPAT; US-PGPUB | 2004/01/07 17:56 |
| - | 0 | sequence with control\$4 with address same periperal with bus with memory.ab. | USPAT; US-PGPUB | 2004/01/06 17:32 |
| - | 27 | sequence with control\$4 with address same (periperal memory) with bus.ab. | USPAT; US-PGPUB | 2004/01/07 17:56 |
| - | 1 | ("6572875").PN. | USPAT; US-PGPUB | 2004/01/07 11:54 |

| | | | | |
|---|-----|---|--------------------|---------------------|
| - | 145 | (chip bus) near3 select with (memory adj bus) | USPAT; US-PGPUB | 2004/01/07 11:08 |
| - | 23 | ((chip bus) near3 select with (memory adj bus)) same switch\$3 | USPAT; US-PGPUB | 2004/01/07 11:18 |
| - | 1 | 2002wo-us27858.ap,prai. | JPO; DERWENT | 2004/01/07 17:24 |
| - | 1 | 2003-567150.NRAN. | DERWENT | 2004/01/07 11:55 |

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3 April 2003 (03.04.2003)

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(22) International Filing Date: 29 August 2002 (29.08.2002)

(25) Filing Language: English

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(71) Applicant: **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, Santa Clara, CA 95052 (US).

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(74) Agents: **HAILS, Robert, L., Jr.**; Kenyon & Kenyon, 333 West San Carlos Street, Suite 600, San Jose, CA 95110 et al. (US).

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(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

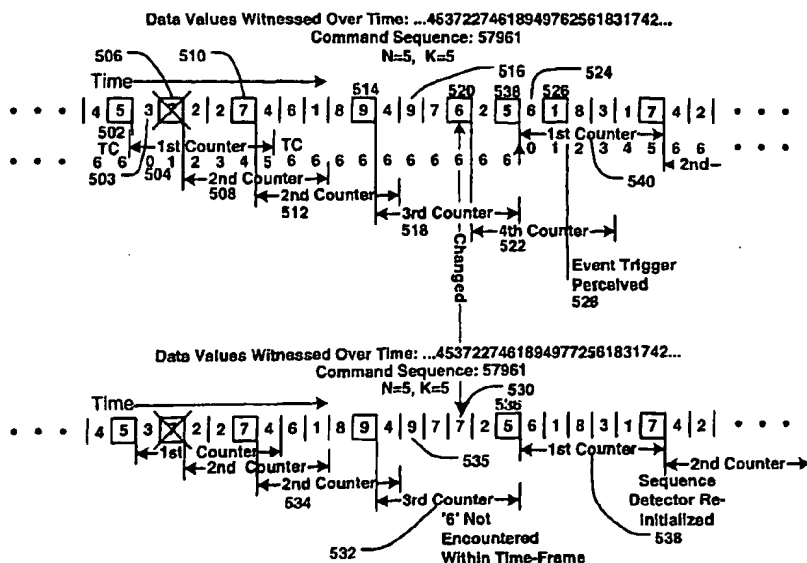
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR COMMAND PERCEPTION BY DATA VALUE SEQUENCING, ALLOWING FINITE AMOUNT OF UNRELATED INTERIM DATA

Time Chart Descriptive of Sequence Detection



(57) Abstract: A system and method for peripheral control. The present invention relates to utilizing device address call sequencing for control of active memory bus peripheral devices, allowing for a pre-defined amount of spurious data between terms in the sequence.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 02/27858

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F13/00 G06F9/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | US 5 051 947 A (MESSENGER CHARLES H ET AL) 24 September 1991 (1991-09-24) column 3, line 1 -column 6, line 7 column 13, line 35 -column 15, line 57 figure 3C | 1-30 |
| A | US 6 249 896 B1 (HO SON HONG ET AL) 19 June 2001 (2001-06-19) column 2, line 59 -column 3, line 30 | 1-30 |
| A | US 5 237 616 A (ADEN STEVEN G ET AL) 17 August 1993 (1993-08-17) column 1, line 54 -column 2, line 23 column 2, line 38 -column 3, line 31 column 5, line 7 - line 60 figure 3 | 1-30 |
| | --- -/- | |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

& document member of the same patent family

Date of the actual completion of the international search

17 June 2003

Date of mailing of the international search report

26/06/2003

Name and mailing address of the ISA

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Authorized officer

Prins, L

INTERNATIONAL SEARCH REPORT

Interns Application No
PCT/US 02/27858

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|--|-----------------------|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | US 5 109 333 A (KAWAGUCHI HITOSHI ET AL) 28 April 1992 (1992-04-28) column 1, line 53 -column 2, line 41 column 10, line 8 - line 32 ----- | 1-30 |
| A | US 4 388 695 A (HEINEMANN JOSEPH B) 14 June 1983 (1983-06-14) abstract ----- | 1-30 |
| A | MOSANYA E ET AL: "CRYPTOBOOSTER: A RECONFIGURABLE AND MODULAR CRYPTOGRAPHIC COPROCESSOR", CRYPTOGRAPHIC HARDWARE AND EMBEDDED SYSTEMS. 1ST INTERNATIONAL WORKSHOP, CHES'99. WORCESTER, MA, AUG. 12 - 13, 1999PROCEEDINGS, LECTURE NOTES IN COMPUTER SCIENCE, BERLIN: SPRINGER, DE, VOL. VOL. 1717, PAGE(S) 246-256 XP000989320 ISBN: 3-540-66646-X page 1 ----- | 1-30 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

Intern: Application No
PCT/US 02/27858

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|----------------------------|---------------------|
| US 5051947 | A | 24-09-1991 | DE 3650360 D1 | 07-09-1995 |
| | | | DE 3650360 T2 | 28-03-1996 |
| | | | EP 0233401 A2 | 26-08-1987 |
| | | | IL 80646 A | 30-06-1991 |
| | | | JP 2067669 C | 10-07-1996 |
| | | | JP 7097374 B | 18-10-1995 |
| | | | JP 62217321 A | 24-09-1987 |
| US 6249896 | B1 | 19-06-2001 | NONE | |
| US 5237616 | A | 17-08-1993 | JP 2788590 B2 | 20-08-1998 |
| | | | JP 6266624 A | 22-09-1994 |
| US 5109333 | A | 28-04-1992 | JP 1263760 A | 20-10-1989 |
| | | | JP 7086870 B | 20-09-1995 |
| US 4388695 | A | 14-06-1983 | CA 1153474 A1 | 06-09-1983 |
| | | | DE 3048365 A1 | 10-09-1981 |
| | | | GB 2070821 A ,B | 09-09-1981 |
| | | | JP 56134400 A | 21-10-1981 |